P A Y   O F F   T H A T   D E B T !

HERE IS A SIMPLE LITTLE PROGRAM FOR THE T/S 2068 WHICH CALCULATES MONTHLY PAYMENTS ON A LOAN AND THEN GENERATES AN AMORTIZATION TABLE WHICH SHOWS, FOLLOWING EACH MONTH, THE TOTAL PAYMENTS ON BOTH PRINCIPAL AND INTEREST AND THE BALANCE OF THE DEBT ITSELF.

THE PROGRAM PROMPTS FOR THREE INPUT FIGURES: THE SIZE OF THE LOAN, THE NUMBER OF MONTHS IN WHICH IT IS TO BE PAID OFF, AND THE INTEREST RATE BEING CHARGED.

IN THE ACCOMPANYING EXAMPLE, THE OUTPUT SHOWS A LOAN OF $2500 TO BE REPAID IN 11 MONTHS AT 14.75% INTEREST. THE PROGRAM CALCULATES THAT THE MONTHLY PAYMENTS WILL BE $244.38.

THE AMORTIZATION TABLE SHOWS, AFTER 7 PAYMENTS (FOR INSTANCE), THAT INTEREST COSTS HAVE ACCUMULATED TO $158.80, THAT $1551.86 HAS BEEN PAID ON THE DEBT, AND THAT THE BALANCE YET TO BE PAID IS $948.14 (THE LATTER 2 FIGURES EQUALLING THE ORIGINAL LOAN).

THIS PROGRAM IS BASED UPON ONE WRITTEN BY J.C. GIARRATANO IN HIS GUIDEBOOK FOR THE T/S 1000.

                                Walt Gaby

Changing The Guard

Beginning with this issue, the newsletter says goodbye to our previous newsletter coordinator, George Mockridge, and welcomes our new coordinator, Jim March. I am sure we all agree George has done a wonderful job increasing the quality and timeliness of the newsletter. I hope I will be able to carry on where George has left off. Please join me in bidding George a fond farewell. (P.S.: wish me luck, too!)

                    Jim March

```
AMOUNT OF LOAN (PV)  = 2500
NUMBER OF MONTHS (N) = 11
    INTEREST RATE (I) = 14.75%
PAYMENT/MONTH (PMT)  = 244.38
```
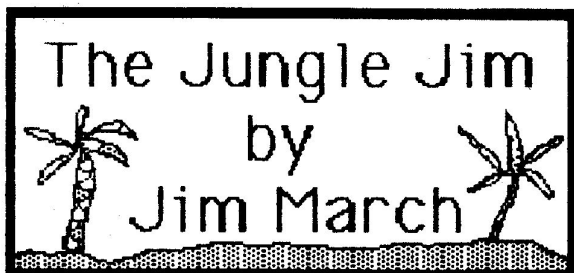
```
        AMORTIZATION   TABLE
```

```
          PAID (ACCUM)
MN
TH   PRINCIPAL  INTEREST   BALANCE

1    213.65     30.73      2286.35
2    429.93     58.83      2070.07
3    648.87     84.27      1851.13
4    870.5      107.02     1629.5
5    1094.85    127.05     1405.15
6    1321.96    144.32     1178.04
7    1551.86    158.8      948.14
8    1784.59    170.45     715.41
9    2020.18    179.24     479.82
10   2258.66    185.14     241.34
11   2500       188.11     0
```

```
100 REM **AMORTIZATION TABLE**
105 REM
110 PRINT " AMOUNT OF LOAN (PV)
= ";: INPUT PV: PRINT PV
120 PRINT "NUMBER OF MONTHS (N)
= ";: INPUT N: PRINT N
130 PRINT "    INTEREST RATE (I)
= ";: INPUT I: PRINT I;: PRINT
"%"
140 LET H=100
150 LET I=I/12/H
160 LET PMT=PV*I*(1+I)↑N/((1+I)
↑N-1)
170 LET PMT=INT (H*PMT+.5)/H
180 PRINT " PAYMENT/MONTH (PMT)
= ";PMT''
190 LET PAY=PMT
200 LET PRI=0: LET IN=0
210 PRINT TAB 6;"AMORTIZATION
TABLE"
220 PRINT "
"
230 PRINT TAB 7;"PAID (ACCUM)"
240 PRINT "MN
"
250 PRINT "TH   PRINCIPAL INTERE
ST   BALANCE"
260 PRINT "
"
270 FOR J=1 TO N
280 IF J=N THEN LET PAY=INT (H*
PV*(1+I)+.5)/H
290 LET MIC=INT (H*PV*I+.5)/H
300 LET PRI=INT (H*(PRI+PAY-MIC
)+.5)/H
310 LET IN=INT (H*(IN+MIC)+.5)/
H
320 LET PV=INT (H*(PV+MIC-PAY)+
.5)/H
330 PRINT J;TAB 4;PRI;TAB 14;IN
;TAB 24;PV
340 NEXT J
```

The Jungle Jim
by
Jim March

Hello, again. Today I continue the discussion on the character generator which I began last month. This second part is for those of you who like to dabble in machine code. I won't explain what is going on this time, but maybe some other month. Have fun with this program!

For those who dare, here is some further detail on the character generator. The computer stores the address of the start of the character table in its IR register pair. To keep the right character table, make sure the IR register pair contains 7680 (1E00H). In fact, the R register is not important. What is important is the I register. This must contain 30(1EH). If the I register contains anything less than 30, then the computer looks at the wrong part of ROM for the character generator table. You can change the "I" register using assembly language if you want to see some strange characters. Try this:

```
 1  REM    12345
 2  POKE   16514,62
 3  POKE   16516,237
 4  POKE   16517,71
 5  POKE   16518,201
 7  SLOW
 8  FOR I=1 TO 22
10  PRINT "123456789QWERTYUIO
         PASDFGHJKLZXCV"
15  NEXT I
20  LET A$ =INKEY$
25  IF A$ = " " THEN GO TO 20
30  LET I=CODE A$
40  POKE 16515,I-28
50  RAND USR 16514
60  GOTO 20
```

Run the program. Try pressing some keys. Press "V", then BREAK to get back. The POKEing in lines 2-5 and line 40 load the Machine Code program:

```
LD A,n
LD I,A
RET
```

The second topic for the day is the PAUSE statement. Useful in many programs, the PAUSE can also be used to wait for input from the keyboard as discussed in this excerpt:

PAUSE <n>   BASIC Statement ("M" key, code= 242). Causes the computer to count for <n>/60 seconds if <n> is less than 32768. PAUSE <n> where n is greater than 32767 causes the computer to count indefinitely. In any case, PAUSE can be terminated by pressing any key.

PAUSE is useful when you want to give someone time to read something on the screen. PAUSE also allows you to set a maximum time someone is allowed to see the screen. The largest PAUSE that will terminate itself is PAUSE 32767. This causes a pause of 32767/3600=9.1 minutes.

Oh, by the way, I got letters from Canada and Finland!!! And you thought this newsletter was some local yokel rag! Thank you for all your comments and praise. Until next full moon...keep on swinging!

Sections of this article are reprinted courtesy of The Book Company, Los Angeles, from the book The Timex / Sinclair User's Encyclopedia by G. Phillips and J. March, 1984.

✳✳✳

Copies of The Timex/Sinclair User's Encyclopedia are available for $13.00 (includes postage and handling) from Jim March, 3216 Partridge Ave., Oakland, Ca., 94605 or for $14.95 including tax from bookstores (including Stacey's in Palo Alto and San Francisco).

✳✳✳

```
TV/Monitor Alignment Patterns

         by Norm Lehfeldt

          Choose one:

   1. Color Bars

   2. Horizontal Lines

   3. Vertical Lines

   4. Crosshatch

   5. Dots

  (Any key returns to menu

     from any pattern)
```

TV technicians use expensive test-pattern generators to adjust the color and convergence of TV receivers and monitors. Here is a short program that converts your T/S 2068 into such a generator.

Key in the listing carefully, taking particular note of the colons in the multi-statement program lines. Save the program using SAVE 'Patterns' LINE 1 and it will auto-run on re-LOADing.

When you RUN the program it will display a menu of pattern choices. Pressing the appropriate number key draws the chosen pattern on the screen. Touching any key returns you to the menu.

The convergence controls on color sets interact in subtle and mysterious ways so, unless you have some experience (or an experienced friend), you probably shouldn't attempt to adjust them without instructions for your particular model.

Strictly speaking, the 2068 does not produce an NTSC standard color signal. So the color bar pattern this program generates should not be used for critical chroma alignment of the receiver or monitor. It _is_ useful, though, for adjusting the 2068 to produce as nearly-standard a signal as it is capable of.

Because slight adjustments of the 2068 can produce great color changes, the program has been written to print the name of each color on the appropriate bar. That way you will at least know what the colors are _supposed_ to be!

```
  10 BORDER 2: PAPER 5: INK 0: C
LS
  20 GO SUB 6000
  30 DIM c$(8,3)
  40 LET c$(1)="Blk": LET c$(2)=
"Blu": LET c$(3)="Red": LET c$(4
)="Mag": LET c$(5)="Grn": LET c$
(6)="Cyn": LET c$(7)="Yel": LET
c$(8)="Wht"
  70 PRINT AT 1,2;"TV/Monitor Al
ignment Patterns";AT 3,8;"by Nor
m Lehfeldt";AT 5,10;"Choose one:
"
  80 PRINT AT 7,5;"1. Color Bars
";AT 9,5;"2. Horizontal Lines";A
T 11,5;"3. Vertical Lines";AT 13
,5;"4. Crosshatch";AT 15,5;"5. D
ots";AT 17,4;"(Any key returns t
o menu";AT 19,8;"from any patter
n)"
  90 LET r=CODE INKEY$-48: IF r<
1 OR r>5 THEN GO TO 90
 100 GO TO (r*1000)
1000 PAPER 0: BORDER 0: CLS
1005 LET b=0
1010 FOR c=0 TO 7
1020 GO SUB 1500
1030 LET b=b+4
1035 IF b>28 THEN INK 7: GO SUB
6000
1040 NEXT c
1050 IF INKEY$="" THEN GO TO 105
0
1060 GO TO 1
1500 PAPER c
1505 FOR x=b TO b+3: FOR y=0 TO
21
1510 PRINT AT y,x;" "
1520 NEXT y
1530 NEXT x
1540 INK 9: PRINT AT 10,b;c$(c+1
)
1550 RETURN
2000 BORDER 0: PAPER 0: INK 7: C
LS
2010 FOR y=3 TO 173 STEP 17
2020 PLOT 0,y: DRAW 254,0
2030 NEXT y
2035 IF r=4 THEN GO TO 3010
2040 IF INKEY$="" THEN GO TO 204
0
2050 GO TO 1
3000 BORDER 0: PAPER 0: INK 7: C
LS
3010 FOR x=0 TO 255 STEP 17
3020 PLOT x,3: DRAW 0,170: NEXT
x
3030 IF INKEY$="" THEN GO TO 303
0
3040 GO TO 1
4000 GO TO 2000
5000 BORDER 0: PAPER 0: INK 7: C
LS
5010 FOR x=0 TO 255 STEP 17: FOR
 y=3 TO 173 STEP 17
5020 PLOT x,y: NEXT y: NEXT x
5030 IF INKEY$="" THEN GO TO 503
0
5040 GO TO 1
6000 PLOT 0,0
6010 DRAW 255,0
6020 DRAW 0,175
6030 DRAW -255,0
6040 DRAW 0,-175
6050 RETURN
```

ED. NOTE: To adj. color, turn screws 2 & 3 located by speaker under "S" key. Screw 1 will adj. for "tear" in lettering. It is usually set O.K. To adj. for "char. bleeding" or "crawlies", pry off top of box in upper left corner and turn screw. Do all this at your own risk.

EBZUG SWAP MEET

October 25 came along with about thirty individuals interested in finding or selling a variety of Timex and Sinclair products. Ram packs and other products for the 1000 proved to be the hottest items. A serial Banana Gorilla printer sold at a nice price but nothing that was exclusively a 2068 product (or a 2068 for that matter) sold. (This reporter was not privy to all transactions, so I could be wrong.) If you are interested in a 2068 with printer, monitor, software, etc. Jim March of PUG would love to hear from you. (George Mockridge can help you get in touch.) Overall it was an interesting evening. Talk indicates the next one might take place at a future SVTSUG meeting (February or March?) See you there!

COMPUTER CALENDAR

NOVEMBER

15   East Bay Z80 User Group
      (415)234-3310   7:30 p.m.

18   Peninsula User Group
      (415)359-3198   1 p.m.

27   Silicon Valley TS User Group
      (408)738-2888 X4536   7 p.m.

DECEMBER

No formal meetings have been scheduled. Look for the special December index issue of Timelinez.

JANUARY 1985

TBA   East Bay Z80 User Group
      Special Ham Radio/Computer
      presentation. All welcome!
      (415)234-3310   7:30 p.m.

20   Peninsula User Group
      (415)359-3198   1 p.m.

29   Silicon Valley TS User Group
      (408)738-2888 X4536   7 p.m.

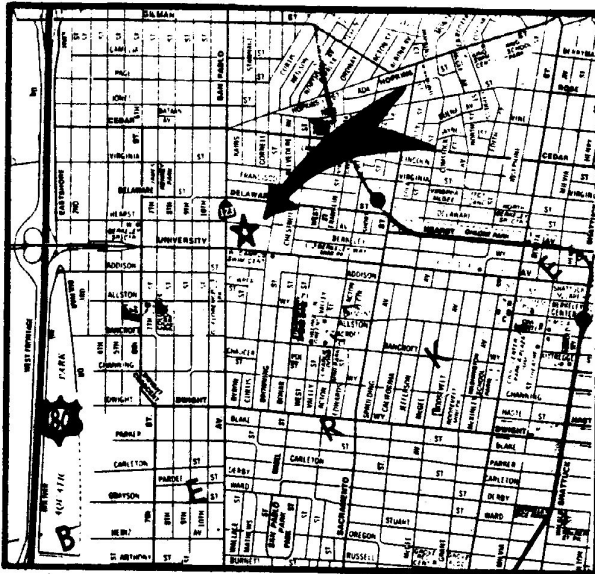*TIMES AND LOCATIONS MAY DIFFER, PLEASE CALL FIRST.*

MEMBERSHIP SCHEDULE

E B Z U G
East Bay Z80 User Group
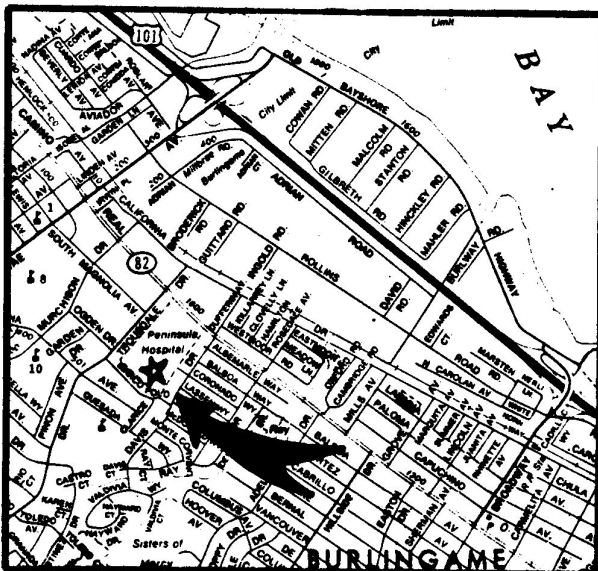654 40th Street
Richmond, CA 94805
(415) 234-3310 or 531-6566

| PRESIDENT | Joel Brody |
| NEWSLETTER EDITOR | Rick Link |

EBZUG meets the third Thursday
of each month at:

WEST BRANCH BERKELEY PUBLIC
LIBRARY at the corner of
University and San Pablo.
Meetings start at 7:30 pm.
Bring equipment and power
strips.

UPCOMING MEETINGS
November 15, 1984
No December meeting
January 17, 1985 (tent)

PENINSULA USER GROUP - PUG
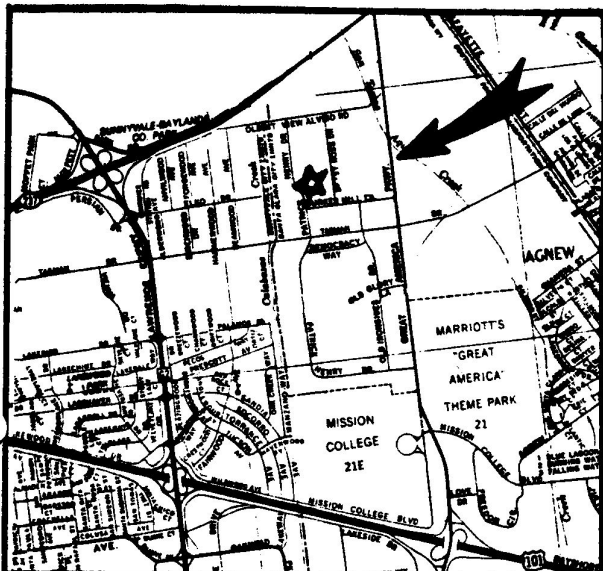263 Gateway No. 187
Pacifica, CA 94044
(415) 359-3198 or 333-2231

| PRESIDENT | George Mockridge |
| LETTER EDITOR | George Mockridge |

PUG meets the third Sunday
of each month at:

PENINSULA HOSPITAL, 1783 EL
CAMINO, BURLINGAME. 1 pm.
Meet.room on lower level. Use
North entrance. Bring equip.
& extension cords if possible.

UPCOMING MEETINGS

NOV. 18
NO DECEMBER MEETING
JAN. 20

Silicon Valley SINCLAIR/TIMEX
User Group (SVS/TUG)
P.O. BOX 4133
Santa Clara, CA 95054-0133
(408) 738-2888 X4536

| PRESIDENT | Rita Carr |
| NEWSLETTER EDITOR | Bill Miller |

SVS/TUG meets the last Tuesday
of each month at:

Dysan Corp. Headquarters
5201 Patrick Henry Drive
Santa Clara, CA

(Please use North entrance
by the loading dock)

UPCOMING MEETINGS
NOV. 27
NO DECEMBER MEETING
JAN. 29

```
TIMELINEZ (c) is  the  joint
publication of three  Timex/
Sinclair User Groups  in the
San Francisco / Oakland / San
Jose Bay Areas.  Old and  new
members are always welcome -
so are experienced  hardware
and software hackers as well
as beginners.  Hope to  see
YOU at our next meeting.
```


I'm T/S-compatible!

©83 BAGINSKI

```
A NOTE TO THE
      PENINSULA  USER  GROUP


   PERHAPS YOU MIGHT BE INTER-
ESTED IN ANOTHER VARIATION IN
THE USE OF WP-32. THIS INVOLVES
THE CREATION OF LARGE LETTERS TO
USE FOR PARAGRAPH BEGINNINGS OR
LETTERHEADS.

   UNFORTUNATLY, ONLY FIVE LARGE
LETTERS CAN BE STORED AT A TIME.
(EACH LETTER USES FOUR CHARACTER
SPACES AND THERE ARE ONLY 21 LO-
CATIONS FOR UDG...USER DESIGNED
GRAPHICS.)

   GOODBYE FOR NOW. IF SOMEONE
HAS ANY OTHER IDEAS, SEND THEM
IN.

        WALT  GABY
```

FROM THE T/S SERVICES N/L
P.O. BOX 15214
RED BANK, TN 37415

QUESTIONS & ANSWERS

In this column each month, we will publish letters related to Timex and Sinclair computers from readers. If you have a question or comment, send it to TSS (Attn:Mail Bag); P.O. Box 15214; Red Bank, TN 37415. If you wish, answers can be forwarded to you by placing your first name and membership number at the start of the question. Letters can be addressed to a member number and will be forwarded to that member if sender includes postage.

AERCO-TASWORD TWO PATCH

If you would like to use TASWORD TWO (TM) Word Processor with your AERCO Interface, you must Poke in this patch first.
```
POKE 57999,127
POKE 58001,103
POKE 58008,127
POKE 58014,219
POKE 58015,127
```
We thank the people at AERCO for this correction.

TS 2050 MODEMS vs Power Strips

We hear from our customers that they have a problem loading the software tape that comes with the Westridge TS 2068 modem. If you are using a Power Strip, move your plug on the recorder to another outlet and it should work. Does anybody want to comment on that?

Several people have written and asked about maintenance now that Timex has quit. The Timex Maintenance Point advises that will honor the 90 day warranty from date of sale. After that, they will repair any TS 2068 for no more than $30.00. To repair a TS 2040 printer is no more than $25.00. The TS 1500 computer will cost up to $25.00 to repair and the TS 1000 computer up to $15.00.

FROM THE T/S USERS
GROUP OF CINCINNATI

CORRECTIONS TO T/S2068

TECHNICAL MANUAL

1. PAGE 111, R_TAPE routine. Register DE must contain the length of the block to be read; DE=17 for the Header and DE=HDLEN for Data. HDLEN is defined on Page 112, figure 4.2-1.

2. PAGE 93, COLOR and HIFLSH cannot always be accessed through the Function Dispatcher because the Function Dispatcher resets the carry flag. COLOR may be accessed by setting the registers as described in the manual and then coding CALL #23DE. HIFLSH can be accessed similarly by coding CALL #2410.

Our group would like to become the NATIONWIDE collector and distributor of public domain software. As soon as we get your groups software we will assemble these into a master library which we WILL send out to all those groups sending in software. If each group just gives us 2 or 3 programs we should be able to collect over 50 programs.

Please include a REM statement at the start of the program listing the author, group, address, and a note about the public domain status.

Please send requests for our program and programs to:

Rick Johnson, President
Cincinnati T/S Users Group
11 Funston Ln.
Cincinnati, Oh. 45218
513-825-1449 Evenings

FROM THE S/T USERS MAG.
(SUM) OF GAINESVILLE, FL.

Users in the Timex Sinclair Users Group of Cincinnati have found a way to use a large printer (must have bit-mapped graphics i.e. Seikosha GP-100/Gorilla Banana, Star Gemini 10x, STX-80) with the 2050 modem and the Aerco Interface.

The modem software makes a call at 54025 and 54026 to copy the screen to the Timex printer. The copy routine in the Aerco software resides at 64628. All that is needed is to change the original call for the copy routine to the one in the Aerco interface.

First, load the Aerco printer driver software and configure to your printer. When the menu comes up again, choose the load option and load the basic part of the modem software ONLY by pressing break as soon as the "Program loading" appears on the screen and stop the tape. Now enter CLEAR 54015 and LOAD "aterm"CODE and restart the tape. Now add these lines to the basic modem loader program:
```
999 STOP
1000 POKE 54205,116
1010 POKE 54206,252
1020 POKE 64263,0
1030 POKE 64264,0
1040 POKE 64265,0
1050 RAND USR 64628
1060 SAVE "aterm" LINE 10
1070 SAVE "aterm" CODE 54016,8000
1080 SAVE "PRCODE"CODE 64256,1111
1190 STOP
```
After you have entered everything, place a blank tape in your tape recorder, set it to record and enter GOTO 1000 and follow the instructions at the bottom of the screen (there will be three saves, so don't wander off). You may want to rewind the tape and verify.

To try it out, TURN ON YOUR PRINTER FIRST - ALWAYS. Enter GOTO 10 to start the program and hit enter for the initialization header. Now press shift and 8 to get the lower screen menu and press P for a screen copy. If you forget to turn on your printer before you press P, the program will lock up, and you will have to turn off the computer and reload and hope that the host computer you were talking to knows you are gone.

I found that you must remove the case from around the modem connector in order to plug in the Aerco Interface (Its bigger than the opening allows). Due to the way that the modem rear connector is soldered, the Aerco Interface will go on crooked. Make sure that the connector is on as far as it will go and that nothing is shorting.

Thanks to the Timex Sinclair Users Group of Cincinnati for this great tip. They can be reached at 11 Funston Lane; Cincinnati, Ohio 45218.

-- Joe Williamson

FROM THE T/S USERS
GROUP OF VANCOUVER

A SIMPLE WAY of finding the area of an irregular space is to divide it into triangles and calculate the area of each triangle. A four-sided figure can be split easily into two triangles, a five-sided into three, and even curved areas can be split into triangles to get approximation of the total size.

John South of Bexhill-on-Sea, Sussex sent a program which does just that on the 1K ZX-81, which he uses to calculate how much fertiliser he needs for his lawn. You must divide a plan of the area into triangles and measure each side. The program will ask you to INPUT each triangle in turn and at the end tells you how large the total area is.

```
10 PRINT "NO. OF TRIANGLES?"
20 INPUT A
30 CLS
40 LET B=0
50 DIM C(3)
60 FOR N=1 TO A
70 PRINT "TRIANGLE NO. ";N
80 LET D=0
90 FOR M=1 TO 3
100 PRINT "LENGTH OF SIDE ";M;"?"
110 INPUT C(M)
120 CLS
130 LET D=D+C(M)/2
140 NEXT M
150 LET B=B+SQR (D*(D-C(1))*(D-
C(2))*(D-C(3)))
160 NEXT N
170 PRINT B
```

Timex Perpetual Calender

Here's something special for you to do. A calender. A special TIMEX perpetual calender that will mark all the meeting dates in this area.

I needed one for my TS2068 so I keyed one in. The formulas I got from someplace else, but the print formatting is my own.

When the program signs on, there is only one option, and that is to key in a month and year such as -JAN1984- with no spaces. The computer must be in the upper case mode.

After you have keyed in the month, you must press ENTER, then the month of your choice will be displayed. When the month is on the screen you then have 5 options. You may, with with the arrow keys advance a month, go back a month, advance a year, or go back one year. The 30 key will COPY the screen for you.

For those that don't want to key this in, a copy will be available to you from me for a measly $3.50. Add .50 for mail order.

In LINE 460, the SMTWTF should be in inverse, use the shift 4 before, and shift 3 after each letter with three spaces at the beginning and 3 spaces betweeen each letter. In LINEs 490 thru 495, the spaces within the ""has to be the GRAPHIC shifted 8.

```
10 REM (c) 1984 BY JAY K BROCKM
AN Version 4.0
20 RESTORE
30 CLS : DIM H(7): DIM N$(12,3)
: DIM D(12): DIM A$(15)
31 LET I=0
32 FOR J=1 TO 7
33 READ H(J)
34 NEXT J
35 DATA 3,7,11,15,19,23,27
40 FOR m=1 TO 12
50 READ n$(m),d(m)
60 NEXT m
70 DATA "JAN",31,"FEB",28,"MAR"
,31,"APR",30,"MAY",31,"JUN",30,"
JUL",31,"AUG",31,"SEP",30,"OCT",
31,"NOV",30,"DEC",31
100 CLS : PRINT TAB 10;"T I M E
I": PRINT TAB 5;"< P E R P E T U
A L >": PRINT TAB 5;"< C A L E
N D A R >": PRINT : PRINT TAB 7;
"* DIRECTIONS *"
120 PRINT "7 = MOVE FORWARD ONE
MONTH": PRINT
130 PRINT "6 = MOVE BACK ONE MON
TH": PRINT
140 PRINT "8 = MOVE FORWARD ONE
YEAR": PRINT
150 PRINT "5 = MOVE BACK ONE YEA
R": PRINT
160 PRINT " (SPACE BAR) = DIRECT
IONS": PRINT
170 PRINT "OR ENTER NEW MONTH &
YEAR": PRINT
180 PRINT "USE <0> KEY TO LPRINT
MONTH"
185 PRINT : PRINT "ENTER THE MON
TH & YEAR DESIRED"
190 INPUT M$: LET Y=VAL M$(4 TO
7)
200 FOR X=1 TO 12
210 IF M$(1 TO 3)=N$(X) THEN  LE
T M=X
220 NEXT X
240 IF Y<1 THEN  GO TO 30
250 LET D=1
260 LET C=INT ((Y-1)/100)
270 LET D=D+C*36524
280 LET D=D+INT (C/4)
290 LET N=(Y-1)-C*100
300 LET D=D+N*365
310 LET D=D+INT (N/4)
320 IF Y/100<>INT (Y/100) THEN
GO TO 340
330 IF Y/400<>INT (Y/400) THEN
GO TO 360
340 IF Y/4<>INT (Y/4) THEN  GO T
O 360
350 LET L=1
360 IF M=1 THEN  GO TO 410
370 FOR I=1 TO M-1
380 LET D=D+D(I)
390 IF I=2 THEN  LET D=D+L
400 NEXT I
410 LET F=D-7*INT (D/7)+1
440 IF M<>2 THEN  LET L=0
445 CLS : PRINT "----------------
------------------"
450 PRINT TAB 11;N$(M);" ";Y
460 PRINT : PRINT "   S   M   T
W   T   F   S"
```